

**REMARKS****Summary of the Office Action**

Claims 1, 10-12, 15-18 and 20-22 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* (U.S. Patent No. 6,058,013) in view of *Miyagi et al.* (U.S. Patent No. 5,506,755) and further in view of *Biber et al.* (U.S. Patent No. 6,260,610).

Claims 23, 24 and 26-29 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* in view of *Miyagi et al.*

Claim 25 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* in view of *Miyagi et al.* and further in view of *Biber et al.*

**Summary of the Response to the Office Action**

Applicant has amended each of independent claims 1, 15 and 23 to differently define the invention. Accordingly, Applicant respectfully submits that claims 1, 10-12, 15-18 and 20-29 remain pending in this application for further consideration.

**The Rejections under 35 U.S.C. § 103(a)**

Claims 1, 10-12, 15-18 and 20-22 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* in view of *Miyagi et al.* and further in view of *Biber et al.*, claims 23, 24 and 26-29 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* in view of *Miyagi et al.*, and claim 25 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Christopher et al.* in view of *Miyagi et al.* and further in view of *Biber et al.* To the extent that these rejections might be reapplied to the

claims as presently amended, they are respectfully traversed as being based on a reference or a combination of references that neither teaches nor suggests the novel combination of features recited in the claims.

With regard to independent claims 1, 15 and 23, as newly-amended, Applicant respectfully submits that *Christopher et al.*, *Miyagi et al.* and *Biber et al.*, whether taken separately or in combination, do not teach or suggest a claimed combination including at least a feature that “said second heat radiating pattern is formed apart from the electronic component on the rear surface of said circuit board and serves as a grounding electrode for the electronic component.”

The Office Action concedes that *Christopher et al.* fails to teach or suggest “the second heat radiating pattern formed on the rear surface of the circuit board serves as the grounding electrode,” but relies upon *Miyagi et al.* to teach “the heat radiating means comprising fins and the heat radiating pattern serves as the grounding electrode” by citing to col. 6, lines 26-32 of *Miyagi et al.* The cited portion of *Miyagi et al.* does disclose that a ground potential can be supplied from a heat radiating fin 7 through a thermal via 4 to a die pad 2c on which a CMOS device 3 is mounted. The Office Action appears to suggest the die pad 2c as the claimed “second heat radiating pattern.” Applicant respectfully submits that (1) *Miyagi et al.* does not disclose that the die pad 2c is a heat radiating pattern, (2) even if the die pad 2c can be used as a heat radiation pattern, the die pad 2c would only correspond to the claimed “first heat radiating pattern,” but NOT to the claimed “second heat radiating pattern,” and (3) the die pad 2c is in contact with, NOT apart from, an electronic part 3 of *Miyagi et al.*

Specifically, as described in col. 9, lines 65-66, *Miyagi et al.* merely uses the die pad 2c in mounting an electronic part. Applicant respectfully submits that *Miyagi et al.* neither teaches nor suggests using the die pad 2c as a heat radiating pattern in its disclosure.

Further, even if the die pad 2c can be used as the heat radiating pattern, the die pad 2c would only correspond to the claimed “first heat radiating pattern,” because the die pad 2c is formed on a front surface of a thin-film multi-layer wiring part 2 whereas the claimed “second heat radiating pattern” is formed on the rear surface of the circuit board.

Furthermore, *Christopher et al.* discloses solder connections 121 and 121', which the Office Action appears to suggest allegedly as the claimed “said second heat radiating pattern.” However, while the solder connections 121 and 121' are formed apart from heat-generating components 119 and 225, they do NOT serve as a grounding electrode for the components 110 and 225. On the other hand, as discussed above, *Miyagi et al.* does disclose using the die pad 2c, the thermal via 4 and the heat radiating fin 7 to obtain stabilization of the standard potential, the die pad 2c, which the Office Action appears to allegedly suggested as the claimed “said second heat radiating pattern,” is **in contact with** the an electric part 3. In other words, *Miyagi et al.* fails to teach or suggest that the die pad 2c may be formed apart from the electric part 3.

Accordingly, Applicant respectfully submits that *Christopher et al.* and *Miyagi et al.*, whether taken individually or in combination, do not teach or suggest at least the feature of “said second heat radiating pattern is formed apart from the electronic component on the rear surface of said circuit board and serves as a grounding electrode for the electronic component,” as recited by each of newly-amended independent claims 1, 15 and 23. In addition, the Office Action does not rely upon *Biber et al.* to cure any aspect of the above-noted deficiencies of

*Christopher et al.* and *Miyagi et al.* Further, Applicant respectfully submits that *Biber et al.* cannot remedy the deficiencies of *Christopher et al.* and *Miyagi et al.*

For at least the reasons set forth above, Applicant respectfully asserts that the rejection of independent claims 1, 15 and 23 should be withdrawn because all of the applied reference, whether taken individually or in combination, do not teach or suggest each and every feature of newly-amended independent claims 1, 15 and 23. MPEP § 2143.03 instructs that "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 USPQ 580 (CCPA 1974)." Further, Applicant respectfully submits that the rejections of claims 10-12, 16-18, 20-22 and 24-29 should also be withdrawn at least because of their dependencies upon respective independent claims 1, 15 and 23, as newly-amended, and for the reasons set forth above.

Without other rejections pending, Applicant respectfully asserts that claims 1, 10-12, 15-18 and 20-29 are in condition for allowance.

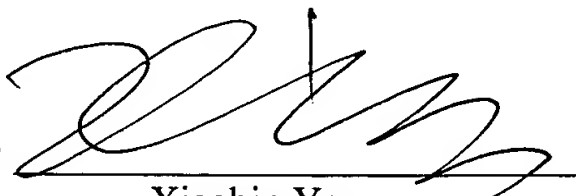
**Conclusions**

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution.

**Except** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310.

Respectfully submitted,

**MORGAN LEWIS & BOCKIUS LLP**

By:   
Xiaobin You  
Reg. No. L0112

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**CUSTOMER NO. 009629**  
**MORGAN, LEWIS & BOCKIUS LLP**  
1111 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004  
Telephone: (202) 739-3000  
Facsimile: (202) 739-3001